

WHAT IS CLAIMED IS:

1. A plasma treatment method of treating the surface of a treatment target substrate by utilizing glow discharge produced by supplying high-frequency power into an inside-evacuated reactor through a high-frequency power supply means, wherein;

5 a plurality of impedance regulation means for regulating impedances on the side of the reactor and on the side of the high-frequency power supply means are provided correspondingly to the impedances of a plurality of reactors, and the high-frequency power is supplied into the reactors via the impedance regulation means corresponding to the reactors.

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15 2. The plasma treatment method according to claim 1, wherein the impedance is regulated by electrostatic capacitance.

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25 3. The plasma treatment method according to claim 1, wherein the impedance is regulated by inductance coefficient.

4. The plasma treatment method according to claim 1, wherein the high-frequency power supply means and each of the reactors are provided separably, and, while the plasma treatment is made in respect of a first reactor to which the high-frequency power supply means

has been connected, a second reactor having impedance different from the first reactor is made ready for the next plasma treatment.

5. A plasma treatment apparatus comprising:
a plurality of reactors each having an evacuable
inside where at least one treatment target substrate is
set in, and having impedances different from each
other;
a high-frequency power supply means for supplying
high-frequency power into each reactor having been
inside-evacuated, to cause glow discharge to take place
in the reactor; and
a plurality of impedance regulation means provided
correspondingly to the impedances of the reactors in
order to regulate impedances on the side of each
reactor and on the side of the high-frequency power
supply means.

6. The plasma treatment apparatus according to
claim 5, wherein the high-frequency power supply means
has an attachment part to which any one of the
plurality of impedance regulation means is detachably
mountable, and any one of the plurality of impedance
regulation means is attached to the attachment part
correspondingly to the impedances of the reactors.

7. The plasma treatment apparatus according to
claim 5, wherein the impedance regulation means is so
provided in the high-frequency power supply means as to
be able to be selected correspondingly to the
5 impedances of the reactors.

8. The plasma treatment apparatus according to
claim 7, wherein the high-frequency power supply means
has a switch for selecting the impedance regulation
10 means.

9. The plasma treatment apparatus according to
claim 5, wherein each of the reactors and the
high-frequency power supply means are provided
15 separably.

10. The plasma treatment apparatus according to
claim 5, wherein each of the reactors and the
high-frequency power supply means are provided
20 separably and the reactors each have the impedance
regulation means.

11. The plasma treatment apparatus according to
claim 9, which further comprises a moving means for
25 moving the reactors.

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